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Integrated Management Information System project

Thirteenth progress report of the Secretary-General*

Summary

The present report describes the activities relating to the Integrated Management Information System (IMIS) operations for the past 12 months and discusses the future developments with the system in place.

At present, IMIS remains the only fully integrated system available to the United Nations system of organizations, meeting their specific requirements in most of their administrative needs in personnel management, budget implementation, treasury, accounting, payroll, procurement and travel.

Following the completion of the development phase of IMIS as initially planned and the implementation of the payroll module at Headquarters in September 2000, the payroll system has been successfully implemented in the Economic and Social Commission for West Asia and in the United Nations Office at Vienna. Preparations for its implementation are well advanced in the other offices away from Headquarters. The United Nations Development Programme and the United Nations Children's Fund are also currently preparing to implement the payroll functionality. With the implementation of the finance functionality now complete in all major duty stations, usage of the system has continued to increase.

* The preparation of the present report was delayed given a need to complete analysis of issues relating to the modernization of the Integrated Management Information System and the related consultations with the Secretariat.

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The report also analyses the present technological conditions of the system. The review of that issue concluded that in order to ensure the ongoing viability and robustness of the system and to ensure that it continues to meet the requirements of the Organization, specific steps for the modernization of the system would be required. This modernization of the technical architecture of IMIS is in line with one of the objectives of the information and communication technologies strategy of achieving an e-administration. The related details and additional resources required for this purpose are described in the report. These additional requirements could be met from within the overall resources available under the special account for IMIS.

I. Introduction

1. The purpose of the Integrated Management Information System (IMIS), which was approved by the General Assembly in section XII of its resolution 43/217 of 21 December 1988, is to develop an integrated system for the processing of and reporting on administrative actions at all major duty stations. The main areas covered by the system are personnel management, post management, accounting, procurement, travel, payroll and budget execution. The Secretary-General has thus far submitted 12 progress reports for the system implementation, the latest of which was submitted to the General Assembly at its fifty-fifth session (A/55/632).

2. The system is currently installed at the eight major duty stations, namely, New York, Addis Ababa, Bangkok, Beirut, Geneva, Nairobi, Santiago and Vienna. It is also being used by the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA) and the United Nations Office for Project Services (UNOPS) and, as far as the human resources application is concerned, is used by the secretariat of the United Nations Framework Convention on Climate Change, the International Labour Organization (ILO), the International Trade Centre UNCTAD/WTO (ITC) and the United Nations Children's Fund (UNICEF). The entire system, fully integrated, relies on a set of core functionalities/mechanisms that support its operations, as well as the operations of the system at multiple locations. Until the eleventh progress report, reference was made to releases, specifically intended as successive deliveries of parts of the software. With the completion in 2000 of the delivery of the last components of the system, Release 4 (payroll) and Release 5 (operational components), and their successful integration, reference to releases has been replaced with references to the functional areas of operation of the system.

II. Status of the project

A. Central controls, operational applications and overall operations

3. The IMIS software is exclusively developed at Headquarters. Enhancements of the software are centrally coordinated through the mechanism of the substantive interest groups established as part of the common long-term maintenance arrangements with the United Nations funds and programmes using IMIS. Following the delivery of the major releases of the software, ongoing maintenance and changes to the IMIS common system continue to be centrally controlled and distributed to ensure ease of maintenance and consistent, accurate operations across duty stations.

4. As reported in the previous progress report, central controls and mechanisms to support worldwide operations have been developed and implemented over the entire life cycle of the project. They include mainly security access to data and transactions, reference tables, including remote data distribution, workflows (e.g. queuing of transactions), account code structure, data consolidation and remote access.

5. The security system has evolved over the development cycle through increased numbers of transactions that can be performed by the authorized users or groups of users. The last upgrade was introduced with the payroll implementation in August 2000.

6. In addition, with a view to increasing accuracy and reducing the workload, certain reference tables are centrally maintained and automatically distributed to offices away from Headquarters, UNDP and UNICEF. Approximately 150 tables contain reference data (country names, currencies, vendors, etc.). Of these, some 55 tables, including salary scales and exchange rates, are distributed to other offices where they are automatically loaded into the local databases.

7. The workflow mechanism (the capability to queue documents to another user group for follow-up action) has been enhanced in certain areas, to provide for better information on the assignments being sent, and easier access to the relevant screens where the recipient fulfils the assignment.

8. In order to facilitate consolidated data analysis and reporting, data from the various duty stations have been made available at Headquarters to create a multi-site reporting database. The database is now available to users who require access to it. Specific reports are under development and users can also ask queries against the database. Progress has been made in using this database for accounts closing activities, as had been recommended by the Board of Auditors. A strategic approach for further data consolidation has

been elaborated jointly by the Office of Human Resources Management, the Office of Programme Planning, Budget and Accounts and the IMIS team, and resources are being earmarked for this purpose.

9. Weekly copies of the IMIS and reporting databases of the offices away from Headquarters are available at Headquarters for consultation and reporting purposes. Direct remote online access to databases in offices away from Headquarters using existing network lines is also available to relevant administrative staff at Headquarters.

10. As previously reported, the progressive implementation of the system at all major duty stations has led to new requirements with respect to processing of personnel actions on the transfer of staff and related data between duty stations, inter-office vouchers and personnel table replication. Work is now in progress on measures to address the new requirements for the transfer of personnel data and inter-office vouchers and related modifications to the existing software.

11. IMIS operations support units have been created in the Office of Human Resources Management and the Office of Programme Planning, Budget and Accounts to provide help-desk assistance to users worldwide and to generate reports, prepare training material and provide substantive training as appropriate, while the overall coordination of training has been taken over by the Office of Human Resources Management.

12. With the completion of the development effort, the system now comprises 1,089 transaction screens, 5,197 help screens, nearly 4 million lines of code and, 921 tables with 14,346 fields. In addition, there are 88,400 web files for desk procedures, 39 hands-on training courses and 14 lecture courses available to system users.

B. Human resources services applications

13. The utilization of the human resources services applications by the users during the reported period was comparable to the previous year; the average number of personnel actions processed monthly at Headquarters was approximately 3,600, compared with 3,500 reported in the twelfth progress report.

14. The majority of the work performed during the past year in the human resources functional area was defined by the implementation of the payroll system. The extensive pre-implementation data-cleaning process conducted by the user community required intensive analysis and support from a joint team of the Office of Human Resources Management, the Office of Programme Planning, Budget and Accounts and IMIS. The introduction of the staff member pay control mechanisms based on automatic updates of staff member entitlements proved to be more complex than had been foreseen and required extensive monitoring, troubleshooting, analysis and prompt resolution of critical problems. The introduction of the payroll functionality has exposed, as never before, the importance of consistency of the personnel data in this highly integrated environment. A number of changes to the system were made to the human resources functional area in a very dynamic manner during the months of preparation for the payroll implementation to optimize system performance and speed up the implementation of the payroll system. This has required substantially more time and effort than originally foreseen.

C. Finance and support services applications

15. IMIS comprises finance and support services applications that are by far the most extensive and complex component of the system. The system supports, among others, budget implementation, funds control, processing of obligations, payables/receivables inter-office vouchers and disbursements, cash management, accounting, procurement and travel transactions.

16. The implementation of the financial application at offices away from Headquarters has been completed. Since the time of issuance of the twelfth progress report, Release 3 was implemented at the Economic Commission for Africa (ECA) in October 2000, at the Economic and Social Commission for Asia and the Pacific (ESCAP) in March 2001 and the United Nations Office at Nairobi in July 2001. The implementation of the financial application to all those offices was successful and has allowed for the standardization of processes across the Secretariat to the maximum extent possible. At each duty station, the accounts are fully reconciled and monthly closings proceed on schedule. It should be noted, however, that major data clean-up efforts had to be undertaken to

complete these implementations. That involved more resources than initially anticipated.

17. With the completed implementation of this part of the system at offices away from Headquarters, further improvements have been introduced to the system. Among those are the inclusion of payroll data in the insurance batch for peacekeeping operations and general trust funds and the establishment of capability to change existing bank account numbers and to link currencies of the euro zone.

18. Currently an enhancement is being introduced to automate approval of documents created by the inter-office voucher batch. This batch process, when fully implemented, will reduce the volume of manual processing and improve the accuracy of inter-office voucher processing, in response to the related recommendation of the Board of Auditors in its report on the 1998-1999 financial statements of the United Nations.[1] Work on an enhancement that supports financial reporting in Swiss francs as well as in United States dollars was completed and is awaiting user test by ITC. Further to the introduction in the last quarter of 1999 of the processing of electronic funds transfer payments to financial institutions in the host country, work has continued on developing an interface to make electronic funds transfer payments to international financial institutions. This is expected to be completed in early 2002.

19. Work has also progressed on replacing the mainframe project management reporting system used for technical cooperation projects in the Department of Economic and Social Affairs. Historic project expenditures which previously resided only in the mainframe have been fully incorporated into IMIS in order to allow full reporting using IMIS data. An enhancement to create new funding documents from existing documents was introduced. This enhancement greatly reduces the volume of data-entry work.

20. In the area of procurement, over 5,900 requisitions were processed in IMIS at Headquarters during the reporting period (1 September 2000 to 31 August 2001) and some 3,250 purchase orders were issued from those requisitions. A feasibility study is being undertaken on replacing or upgrading the present procurement software package used at Headquarters.

21. In sum, during the reporting period, 449,415 financial documents were processed in IMIS. Of these, 231,196 were processed at Headquarters and 218,219 were processed in the offices away from Headquarters.

D. Payroll and related applications

22. The online time and attendance module, created to record the attendance of staff (e.g. annual and sick leave) and overtime assignments data, such as regular and special overtime, was implemented at Headquarters in August 1999 and at the offices away from Headquarters in 2000 and 2001.

23. The new payroll functionality was successfully integrated into production at Headquarters in August 2000. Because of the size and complexity of the payroll module, payroll processing was initially limited to a representative group of staff (about 300) from Headquarters and staff from one peacekeeping mission. From January 2001, payroll processing was extended to all the Secretariat staff payrolled from Headquarters (approximately 9,500), including staff in field missions. With the completion of the implementation of Release 4 at Headquarters, the previous mainframe payroll system was discontinued at Headquarters as of February 2001, after a month's parallel as a contingency measure. However, the mainframe payroll system continued to be used for UNDP, UNICEF and, until June 2001, for ESCWA. It is also used minimally for Headquarters for historical reporting.

24. UNDP and UNICEF have also been preparing for the implementation, in 2001, of the IMIS payroll, rental subsidy, insurance and time and attendance applications. In this exercise they have been assisted by the Office of Human Resources Management, the Office of Programme Planning, Budget and Accounts, the Treasury and the IMIS Service. While time and attendance modules have already been implemented in both UNDP and UNICEF, data verification and clean up are still in progress. Modifications or enhancements to IMIS to deal with the special requirements of UNDP have been carried out. Parallel payroll runs for multiple months for the full population for UNDP are in progress in order to adhere to an implementation planned for before the end of the year. The original plans to implement the module in mid-2001 were changed, largely owing to continued data clean-up efforts. Similar parallel runs for UNICEF are considered for the near future, to prepare for the implementation of the IMIS payroll before the end of the year. However, a number of internal workflow and

other issues remain, which may delay the implementation till 2002. With the implementation of the IMIS payroll for both UNICEF and UNDP, the use of the mainframe payroll system for those organizations will be discontinued in 2002, except for minimal use for historical reporting.

25. The experience gained from the implementation of the payroll module at Headquarters has indicated that substantially more time and effort is required than originally planned. In particular, data clean up, synchronizing the functioning of Releases 2, 3 and 4, and more extensive training of staff all require more time and effort. This prompted revision of the implementation schedule of the payroll module at the offices away from Headquarters and has resulted in a slower implementation of the module which is now planned to be completed in 2002. In order to minimize the costs of implementation and at the same time to manage an aggressive implementation schedule for the payroll module at offices away from Headquarters, it was decided to organize training in two sessions for a limited number of staff from those offices at Headquarters. In March 2001, 27 staff from ESCWA, the United Nations Office at Vienna and the United Nations Office at Geneva were trained in New York on all aspects of operating the new payroll and related functionalities. During the training, these staff practised payroll processing for their offices on copies of the databases from their respective duty stations. They also tested the system to ensure compatibility with their special requirements. Furthermore, they identified workflow issues and developed preliminary but detailed implementation plans for their respective offices.

26. In July 2001, ESCWA implemented payroll processing in IMIS, after parallel runs with the mainframe system at Headquarters. While the mainframe payroll processing at Headquarters for ESCWA has been discontinued, the Headquarters payroll section continues to be responsible for the payroll processing for ESCWA by remotely accessing the latter's IMIS database. However, the major inputs for the payroll processing such as entitlements, rental subsidy, insurance, time and attendance, and the post-payroll processes such as disbursement are now managed locally by ESCWA through IMIS.

27. The payroll module has been fully implemented in the United Nations Office at Vienna, after enhancements were introduced to IMIS to meet special requirements. Similar efforts are under way in the United Nations Office at Geneva, which anticipates the implementation of IMIS payroll processing by January 2002.

28. The second session of training to operate the IMIS payroll is under way in New York for a limited number of staff from the United Nations Office at Nairobi, ECA, ESCAP and ECLAC. Upon the return of staff from training, preparations for the implementation of the payroll at those duty stations will be initiated. The implementation date at those offices will be determined locally in consultation with Headquarters, based on the results of their parallel runs and possible local constraints, with the overall expectation that implementation of the payroll module will be completed in July 2002.

E. Reporting applications

29. During the 12-month period under review, users accessed the IMIS Reporting Facility application at Headquarters 113,257 times (an average of approximately 343 times per working day, or some 21 per cent more than in the previous reporting period). In over 82 per cent of usage, the users generated standard reports, while in some 16 per cent of the usage, users downloaded data for use with customized queries and/or reports.

30. Effective in July 2000, responsibility for the development of reports was transferred from the IMIS team to the user areas. The staff remaining on the IMIS team continue to maintain the reporting front-end application and the reporting (extracts) database. The IMIS team also provides limited support for reporting issues that fall outside the finance and human resources functional areas.

31. In 2001, the multi-site reporting database was made available for use by a selected group of users. This database makes available Headquarters data and data of the seven offices away from Headquarters. Using copies of all the offices' databases refreshed at Headquarters on a weekly basis, selected financial tables and human resources tables are merged into a multi-site. In August 2001, the first customized report was written using this multi-site database. Further work in this direction continues.

F. Infrastructure and technical issues

32. The production infrastructure at Headquarters that supports access to ad hoc reporting and diagnostics for Headquarters and offices away from Headquarters data has been upgraded to meet both the additional payroll processing requirements and to keep it technologically up to date. Two new servers have been installed for this purpose. The disaster recovery server has been replaced so that it can handle payroll processing in the event it is needed. The IMIS production operations unit also supports the hardware at UNDP and UNICEF, and that hardware has also been upgraded so that it can meet payroll-processing requirements. A new data storage facility will be installed in the near future to improve the disk storage of IMIS and non-IMIS applications and enhance the security and robustness of operations. Resources are provided to each office away from Headquarters to purchase a fault-tolerant disk storage facility for their IMIS production operations.

33. The previous progress report indicated that plans were being made to upgrade the technical platform of IMIS and initiate a project to re-engineer the user interface. The technical platform application at Headquarters was upgraded in 2001 to the latest version. The computer operating system that supports IMIS, HP-UX, has been simultaneously upgraded to the latest release. Similar upgrade is in the process at all IMIS overseas locations. It is expected that the upgrade of the technical platform at all locations will be completed in 2002.

34. As indicated in the twelfth progress report, one of the main objectives for the maintenance of the system was to re-engineer the user interface to make the system more user-friendly. A full functioning proof-of-concept was completed in 2001 for two IMIS user sessions that demonstrated IMIS running on the World Wide Web. A proposal to complete a conversion of the entire IMIS application to the Web is currently under review. This project and the related resource requirements are discussed in sections IV and V below.

35. With the implementation of the finance application at all offices away from Headquarters, possibilities for wider use of the consolidated database were explored. A project on the periodicity of updates to the consolidated database and on database replication will be launched. This technology could be used to exchange data between the central and local IMIS systems, not only for reporting purposes but eventually for transaction processing.

III. The Integrated Management Information System as a common service

36. Within the framework of the Task Force on Common Services, meetings of the substantive interest groups continued during the reporting period on the establishment of IMIS as a common service for the United Nations funds and programmes. The meetings have served as a forum for review of requests for the enhancement and prioritization of items to be worked on beyond the scope of activities described in the present report. In the past year UNDP conducted a study of its needs in information technology in order to decide on the future direction of its information technology strategy. Maintenance services for IMIS applications installed or to be installed in the future as well as technical help desks and consulting services for United Nations funds and programmes will continue to be provided on a cost-recovery basis.

IV. Future developments

A. Activities since previous progress report

37. As reported in the twelfth progress report, the IMIS maintenance team planned to concentrate thenceforth on: (a) continuous assistance to offices away from Headquarters in implementation of the system locally and related issues of training and support; (b) issues identified during testing and those arising in the course of normal operation of the system; and (c) major enhancements to the system in response to legislative or managerial decisions.

38. The activities referred to in (a) and (b) above were reported on in earlier sections of the present report. They have progressed steadily over the reporting period. It should be noted, however, that those activities had a greater than anticipated impact on other work and enhancements that were planned. Both a need for refining the payroll system on the one hand and a need to support the implementation activities on the other called for significant working time and

resources. This, in turn, affected the implementation of the scheduled enhancements of the system.

39. Progress over the reporting period on major enhancements of the system can be summarized as follows:

(a) Consolidation of data has progressed with the full implementation of the consolidated extracts reporting database. This has been used in the preparation of the financial statements. An approach to further consolidation in the medium-term has been discussed with the offices concerned. This will draw on the experience to be gained from consolidating, at the end of 2001, for the first time, financial data from all eight major duty stations. A technical and business study of options for full system consolidation is foreseen during 2002 with the use of additional resources, as detailed in section V, and table 2.C below;

(b) During the analysis of requirements for the archiving of data it became apparent that it was necessary first to develop batch processes that perform closing entries in the accounts and to create records for opening balances, pre-requisites to the actual archiving process. Work on the processes for accounts closing and opening balances has begun and when it is completed the requirements for archiving will be finalized. It is expected that this will be completed during the first half of 2002, allowing the archival process to be fully developed later in 2002;

(c) As described in paragraph 33 above, the technical platform of the IMIS application has been upgraded to the latest version. This will make it possible for the entire application to be designed in Web format. It is expected that the latest version of the application will be installed at Headquarters before the end of 2001 and distributed to all other locations during 2002;

(d) Owing to the need to allocate more resources to the activities relating to the implementation of the payroll system, resources for the implementation of the use of electronic forms have been limited and progress has been slow. Staff members may now submit their request for a lump sum for home leave travel using an online form; however, the data are later entered into the IMIS database manually. Some analysis has been carried out on the introduction of other electronic forms (e.g. the submission of travel claims by staff members). When the results of these pilot projects have been evaluated it will be determined how best to proceed with these projects;

(e) There has been some research into "personal accounts" to make certain IMIS personal data available online in the context of implementation of that project. UNICEF has introduced a similar project, which appears to have many of the characteristics that the Secretariat plans to introduce. The Department of Management intends to continue cooperation with UNICEF on this issue with a view of advancing implementation of the project;

(f) Re-engineering of the user-interface was initiated in 2001 with the upgrade of the application software. In addition, to implement a migration of the entire application to the new software base, two functional user sessions were developed in the new Web format in the pilot stage of the project. The work on this project will continue, but it will require additional time and resources. This issue is further discussed in section V below;

(g) In the area of reporting there has been some research of potential replacements for the reporting tool used currently. Given the intended move of the system to the Web format, options have been considered that would allow reports to be readily accessible on the Web. In addition, a survey of the user base for the IMIS reporting application is in progress to determine the changes to the application that will have the most impact for users. These studies will provide the basis for porting the reporting application to the Web format. Work on this project will continue.

40. It will be recalled that in the context of the review of the twelfth progress report by the General Assembly at its fifty-fifth session, information was requested on progress made with regard to the integration of IMIS with other programme budgeting and reporting systems being developed. This issue is being discussed within the Department of Management so that when the new budget information system is introduced, integration with IMIS will be maintained, as it has been in the past with the outgoing system, and further strengthened. There has also been collaboration within the Department on the key reporting item project. For that project the IMIS database tables have been made available for development of the related application.

B. The Integrated Management Information System in the field

41. Following the review of the twelfth progress report, the General Assembly, in its decision 55/463 of 12 April 2001, endorsed the recommendation of the Advisory Committee on Administrative and Budgetary Questions (A/55/7/Add.8) that any structural and financial constraints that resulted in limited progress in the implementation of IMIS in peacekeeping operations and the International Tribunals be identified. While some progress as described in the following paragraphs can be reported, constraints have essentially been financial. It has not been possible to make resources available within the established IMIS budget to conduct a detailed requirements analysis and determine what functionality, if any, may be required by peacekeeping operations and Tribunals that is not already available.

42. With regard to the International Tribunals, as reported in the twelfth progress report, the international staff of the International Criminal Tribunal for Rwanda are administered through IMIS at Headquarters. With the full implementation of the payroll module, the payroll for these staff is now also operated through IMIS. Installation of a local IMIS system at that Tribunal is not possible owing to technical difficulties. Possibility for a remote access to IMIS at Headquarters will be considered in the future. With regard to the International Tribunal for the Former Yugoslavia, there has been no practical progress on the issue during 2001. The implementation of the system for that Tribunal could be either local or through remote access to the United Nations Office at Geneva. However, the solution depends on concerted effort, particularly on the part of management of that Tribunal.

43. Regarding peacekeeping operations, it was stated in the twelfth progress report that an analysis of the situation for the IMIS implementation for the peacekeeping missions would be conducted jointly by the Department of Management and the Department of Peacekeeping Operations at four levels: the IMIS database, the front end (users' interface), the specific functional requirements of peacekeeping missions and the technical platform including remote accessibility and portability.

44. Within the available resources in both the Department of Management and the Department of Peacekeeping Operations, the first phase of the analysis has been focused on the technical platform and remote accessibility. A series of tests of remote access have been carried out. In the first tests the technology allowed the end user remote access with light local infrastructure requirements, including a personal computer with communication software installed and a telecommunications link, either by land-line or satellite. The results were positive when using a landline. The use of a satellite link proved not to be sufficiently reliable. Further tests were conducted using an Internet connection and the pilot Web-enabled IMIS screens. These tests were positive but they revealed the potential need for additional capacity with respect to the telecommunications links used. Various scenarios are also under consideration, including the implementation of a centralized IMIS installation servicing peacekeeping missions remotely, with the benefit of minimizing the requirement for local mission-based infrastructure and support, or the implementation of an IMIS installation at the mission site, or a combination of these two scenarios. This is being considered given the varying degrees of infrastructure support capability and stability between different missions. It is apparent from this phase of analysis that the telecommunications infrastructure will require enhancing in order to provide satisfactory performance of the remote access to IMIS by the missions.

45. On the basis of the results of these tests, the Field Administration and Logistics Division of the Department of Peacekeeping Operations and the Information Technology Services Division of the Office of the Central Support Services have agreed on a phased implementation of IMIS, with a link between IMIS at Headquarters and three peacekeeping field locations — the United Nations Truce Supervisory Organization (UNTSO), the United Nations Peacekeeping Force in Cyprus (UNFICYP) and the United Nations Logistics Base at Brindisi — as the first phase of the IMIS implementation in peacekeeping operations. In this first phase, the data entry of personnel data will be transferred from Headquarters to those field offices, which will eliminate the duplication of data entry work now required. For the field missions selected, the communications infrastructure already in place is sufficiently reliable and robust to support remote access. The first phase is expected to be completed in early 2002.

46. The upgrade of the system to the application software undertaken in 2001 would provide for re-engineering and improvements to the users' interface. These can be done in a way to meet specific requirements of the peacekeeping missions. The re-engineering effort will comprise two approaches to different sets of screens. The first consists of transferring IMIS screens to the Web format, with redesign to improve navigation and streamline data entry and other online processing. This will be applied to those screens where the most benefit is expected from such redesign. The second approach consists of transferring IMIS screens to the Web format, without substantial redesign; this approach will be applied to the less complex and "lower impact" screens.

47. The analysis of specific requirements for peacekeeping missions will reveal the scope of the changes to the IMIS database that may be required. Furthermore, aside from requirements that may be identified during the analysis for peacekeeping missions, the planned addition of new functionality in IMIS could include features for procurement and related processing, including vendor and contract management, supplies and fixed asset management. Preliminary analysis of the scope of the changes indicates a need for additional resources for implementation of the project.

C. Technological upgrade of the Integrated Management Information System: a long-term strategy for the system

48. The efforts to date have focused on the development of the functionality of IMIS to support United Nations administrative processes. Over the years, the technological platform of the system, which dates from the early 1990s, has become more and more obsolete. The long-term strategy for IMIS functioning addresses the need for a technological upgrade of the system to ensure that its viability and capability will be maintained to meet the needs of the Organization. It should also be noted that when the current technology was chosen, elements of a modern technological architecture, such as the Internet, did not exist or were not available. Time has come to address these apparent shortcomings of the technological infrastructure of the system. These include:

(a) *The outdated user interface.* The experience gained from the system's operation over the years clearly indicated that the user interface is outdated and its improvement is required to correspond to evolutions in workflow and to allow additional streamlining of business processes in the system;

(b) *The inability of the system to process online transactions and off-line (batch) processes concurrently.* Such a capacity is required to processing 24 hours a day, 7 days a week as a prerequisite to allow remote access to the system from and to locations with highly disparate time zones and ultimately to support system consolidation;

(c) *Some programs of the system were written in programing languages that are no longer easy to maintain.* As the skills to maintain these programs become rarer, there are greater risks and costs associated with system maintenance. Such programs have to be rewritten in modern programing languages;

(d) *The need to deploy the system and its reporting application on the Web.* The ability to deploy the system on the Web will be an important factor in allowing remote access and full deployment of IMIS to all field missions. Furthermore, it will contribute to cost savings as the support requirements of local systems will be reduced;

(e) *Consolidation of the system.* In the original design of the system, using the technology available at that time, the local databases were implemented to meet the Organization's requirements on a principle of autonomy of operations in each major duty station. The current architecture of the system hampers the consolidation of data from offices away from Headquarters for reporting purposes and requires extra efforts in transaction processing, relating for example to the transfer of staff, the issuance of allotments, and inter-office financial authorizations. The Organization's need for the consolidation of systems is an increasingly pressing managerial requirement at present.

49. With regard to the consolidation problem, operating the system at United Nations duty stations where IMIS has already been implemented has clearly indicated the need to interact with IMIS in a global manner, online and on a real-time basis, without restrictions resulting from the location of data or differences in time zones. This interaction includes transactions that involve the participation of more than

one IMIS site, such as when payments are requested at one site and made at another, movements of staff between duty stations, immediate United Nations Secretariat-wide budget performance and post management reporting or decentralized procurement (requests entered at one site, purchases made at another). These administrative needs are currently hampered by distance and time: an IMIS site can only directly perform changes on its own local data and IMIS is generally only available for online use during local daytime hours. The capability to perform and report on global transactions requires the availability at all stations involved to be on duty on a "24 hours a day, 7 days a week" basis. This will entail the re-engineering of the processes as well as the computing and software infrastructure to allow the concurrent operations of online and off-line processes.

50. The worldwide availability of IMIS data and of the system would represent a significant enhancement effort which, in addition to its re-engineering, could include the following enhancements:

(a) The identification of finance and human resources transactions and reports that require the intervention of more than one IMIS site;

(b) The introduction of software components that would remotely get or provide data required for these transactions;

(c) The creation of global security, auditing and administrative controls;

(d) The review of United Nations administrative procedures that could be streamlined owing to the introduction of worldwide capability.

51. The development of these complex tasks would require full-time staff with specific knowledge of United Nations administrative procedures and practices and IMIS current architecture. Similarly, it would require external development resources such as experts, software and equipment, which might need to be procured to speed up these tasks. The analysis of the activities outlined above will address the scope of changes to the IMIS technological architecture and will include the determination of the right approach to further consolidate IMIS processing and data.

52. As indicated above, work has started to migrate IMIS online programs to the Web, facilitating its remote access in other United Nations offices. This will also allow the design changes and improvements to the user-interface that are now required. Other system components, such as the software tool used in the accounts posting and processing applications, now need to be converted to newer and more accessible programming languages for which maintenance skills can more readily be obtained. Similarly, the auxiliary procurement system, called "Reality", which has been in service for almost a decade, and some of its basic components, without vendor support, could be replaced. The development of a new procurement system that is fully IMIS-compatible has become apparent.

53. The scope of the above strategic enhancements to IMIS calls for additional resources. These additional requirements are discussed in section V below.

V. Budgetary matters

A. Revised estimates for implementation of the present system

54. In its resolution 53/219 of 7 April 1999 the General Assembly, after reviewing the tenth progress report, the report of the independent experts and the report of the Board of Auditors, approved the overall budget estimates of $77.6 million for completion of the development of IMIS. As reflected in table 1 below, the projected overall level of expenditures is currently expected to amount to $78.6 million, representing additional requirements in the amount of $975,700 over the provision approved to date for the additional activities, such as the extensive data cleaning and verification essential for the implementation of the payroll module, which were not fully foreseen.

55. The staff cost projections for general temporary assistance, based on actual expenditures to date, show projected additional requirements of $594,500. This projection is based on the need to maintain temporary staff for longer than initially anticipated to support the implementation activities for the payroll module in the offices away from Headquarters. The experience of its implementation at Headquarters and ESCWA clearly indicated that the level of support for these activities, notably data clean-up work, was far greater than anticipated. The temporary staff would need to be extended into 2002.

Table 1
Revised estimates for the development and implementation budget of the Integrated Management Information System
(Thousands of United States dollars)

	Overall budget estimates approved by the General Assembly	*Expenditures as at 31 August 2001*	*Projected expenditures for the period from September 2001 to project end*	*Revised total cost of the project*	*Estimated surplus/ (deficit)*
Staff Costs	19 545.5	18 518.1	1 621.9	20 140.0	(594.5)
Travel	1 545.5	1 009.0	785.8	1 794.8	(249.3)
Training	4 678.0	4 174.8	476.3	4 651.1	26.9
Contractual services	46 596.2	46 751.9	-	46 751.9	(155.7)
Communications	283.9	283.9	-	283.9	-
Supplies/miscellaneous expenses	308.5	307.0	-	307.0	1.5
Hardware	2 824.8	2 829.2	-	2 829.2	(4.4)
Software	1 796.7	1 796.7	-	1 796.7	-
Total	**77 578.9**	**75 670.6**	**2 884.0**	**78 554.6**	**(975.7)**

56. The projected travel costs, related exclusively to implementation activities at offices away from Headquarters, show an increase of $249,300 owing to increases in the number of staff assigned for implementation of the payroll module, in particular during pre-implementation and implementation activities at these offices, including data cleaning and training.

57. The projected expenditures for contractual services show an increase of $155,700, resulting from a need for payroll testing and for software changes required because of refinements in the requirements.

58. Projected expenditures for training, hardware, software, communications and supplies show minor variations reflecting actual requirements.

B. Additional requirements for the technological enhancement of the system

59. The re-engineering of the user interface with the ability to deploy the system on the Web would require 12 work-months of general temporary assistance, equivalent to three P-4 and three P-3 posts, to develop detailed requirements for the redesign and testing of screens in the new Web format. Contractual services would include a 10-person team (project manager and programers) provided by the application software vendor. The team would migrate all screens to the Web format and re-engineer the most commonly used IMIS screens over a period of 12 months, as well as train the IMIS development team to take over the system maintenance upon completion.

60. The re-writing of entitlements/posting applications in modern programing language would require 12 work-months of general temporary assistance, equivalent to two P-3 posts, and 12 months of contractual services for one programer to replace the existing software development tool, PowerModel, with programs written in modern programing languages, and which would also allow for performance improvements to be made.

61. The study of functional and technical needs for consolidation of the system would require 12 work-months of general temporary assistance, equivalent to one P-4 post and two P-3 posts, to undertake a study of both functional and technical issues that need to be addressed in moving away from the current fragmented database architecture, and to identify the consolidated system. Contractual services would entail 12 months of an expert on database technology to provide advice and recommendations on the database architecture. It is expected that the study would provide an estimate of the scope of the work and the resources that would be required subsequently to implement the chosen solution.

Table 2
Estimated resource requirements for the technological update of the Integrated Management Information System
(Thousands of United States dollars)

	Projected expenditures	*Cost estimates*	*Starting date*	*Estimated completion date*
A.	Re-engineering of the user interface with the ability to deploy the system on the Web			
	General temporary assistance	750.0	March 2002	April 2003
	Contractual services	2 200.0		
B.	Re-writing of entitlements/posting applications in modern programing language			
	General temporary assistance	227.0	March 2002	April 2003
	Contractual services	275.0		
C.	Study of functional and technical needs for consolidation of the system			
	General temporary assistance	364.0	April 2002	May 2003
	Contractual services	275.0		
D.	Re-engineering of the system for 24 hours a day, 7 days a week operations			
	General temporary assistance	341.0	January 2002	February 2003
E.	Study on the reporting application update in the context of deploying the system on the Web	341.0	January 2002	February 2003
	General temporary assistance	227.0	March 2002	April 2003
	Total	**4 659.0**		

62. The re-engineering of the system for 24 hours a day, 7 days a week operations would require 12 work-months of general temporary assistance for three P-3 posts to reprogram the batch processes that currently require the system to be off-line, as well as the online processes that might be required to allow concurrent online and batch processing.

63. The study on the reporting application update in the context of deploying the system on the Web would require 12 work-months of general temporary assistance for two P-3 posts to identify alternative solutions to replace the current reporting tools based on the Paradox application in the context of deploying the system on the Web. The study would provide recommendations on appropriate solutions and determine the scope of the work and the related resources required for the full update of the reporting application.

C. Modalities for financing the estimated additional requirements

64. The additional requirements estimated in the context of the present report are summarized as follows:

	United States dollars
Revised estimates relating to implementation of payroll module during the years 2001 and 2002 (paras. 54-58)	975 700
Additional costs associated with required technological update of the system (paras. 59-63)	4 659 000
Total	**5 634 700**

65. It should be noted that the Integrated Management Information System Fund was established in 1989 for the purpose of systems development and implementation. The status of the Fund at 30 June 2001 may be seen in annex IV to the present report. Over the years of the project's implementation, the funds deposited to the account have generated additional incomes through investment of the funds. The income at 30 June 2001 amounts to $5,956,000. They form part of the Fund balance reported in annex IV. It is proposed to utilize that balance in part to finance the additional requirements of $5,634,700 estimated in the context of the present report.

VI. Recommendation

66. **The General Assembly is requested to approve an additional provision of $5,634,700 under the Integrated Management Information System Fund to meet the requirements of IMIS associated with activities detailed in section V of the present report, to be financed from the investment income reported under the Fund at 30 June 2001.**

Notes

[1] *Official Records of the General Assembly, Fifty-fifth Session, Supplement No. 5* (A/55/5), vol. I, chap. II, para. 108.

Annex I

Standard reports in production and under development as at September 2001 and Integrated Management Information System Reporting Facility report statistics

	Integrated Management Information System Reporting Facility report statistics as at 31 August 2001 Sorted by subject area name within category					
	In production		*In progress*		*Total*	
Subject area	*31 August 2000*	*31 August 2001*	*31 August 2000*	*31 August 2001*	*31 August 2000*	*31 August 2001*
Reference						
Accounting	77	77	-	-	77	77
Entitlement	25	32	-	-	32	32
Geographic	34	34	-	-	34	34
Personnel	23	23	-	-	23	23
Payroll	-	-	-	-	-	-
Travel	-	-	-	-	-	-
Total	**159**	**166**	-	-	**166**	**166**
Business areas						
Budget	3	4	-	-	3	4
Insurance	10	11	1	5	11	16
Payroll	6	9	12	8	18	17
Personnel administration	43	44	2	0	45	44
Post management	-	-	-	-	-	-
Procurement	-	-	-	-	-	-
Standard financial	85	89	5	9	90	98
Standard financial — technical cooperation	6	18	16	12	22	30
Time and attendance	6	6	-	-	6	6
Travel and transportation	5	6	-	-	5	6
Treasury	3	3	-	-	3	3
User security	31	31	-	-	31	32
Total	**198**	**221**	**36**	**35**	**234**	**256**
Executive Office						
Standard financial	32	46	-	-	32	46
Personnel administration	39	36	-	-	39	36
Total	**71**	**82**	-	-	**71**	**82**
Grand total	**428**	**469**	**36**	**35**	**464**	**504**

Annex II

Integrated Management Information System implementation dates and usage and reporting statistics as at August 2001

A. Implementation dates

	UNHQ	*UNOV*	*ESCAP*	*UNOG*	*ECLAC*	*UNON*	*ECA*	*ESCWA*
Live date								
Release 1 (HR)	9/93	6/96	8/96	3/97	4/97	6/97	10/97	2/98
Release 2 (Ent)	4/98	8/98	8/98	8/98	9/98	1/99	8/98	7/98
Release 3 (Fin)	4/96	7/99	3/01	4/00	7/00	7/01	10/00	10/99
Release 4 (Payroll)	9/00	10/01	4/02	1/02	4/02	7/02	7/02	7/01

B. Usage statistics as at August 2001

	UNHQ	*UNOV*	*ESCAP*	*UNOG*	*ECLAC*	*UNON*	*ECA*	*ESCWA*
Number of users								
Registered users	1 472	389	407	742	266	481	455	271
Transactions								
Approved personnel actions	265 814	21 062	8 349	65 155	9 750	19 752	11 143	5 277
Recruitment requests	1 780	274	22	799	0	0	15	33
Travel requests	34 554	2 756		3 961	93			786
Pre-encumbrances created	61 900	1 354		4 188	1 940			733
Obligations created	77 406	1 384		3 477	1 948			719
Database size								
Staff members	11 538	965	649	3 893	607	1 521	853	335
Household members	17 747	1 583	1 277	6 037	1 337	3 210	2 220	747

C. Reporting statistics from 1 September 2000 to 31 August 2001

	UNHQ	*UNOV*	*ESCAP*	*UNOG*	*ECLAC*[a]	*UNON*	*ECA*	*ESCWA*
Number of transactions	113 257	14 202	10 205	12 175	2 316	3 425	11 448	7 464
Number of download(s)	18 554	123	1 230	1 963	52	1 265	3 939	451
Number of run report(s)	93 961	14 050	8 974	10 077	2 183	2 141	7 262	6 963
Number of unique users	658	77	96	133	19	29	28	45

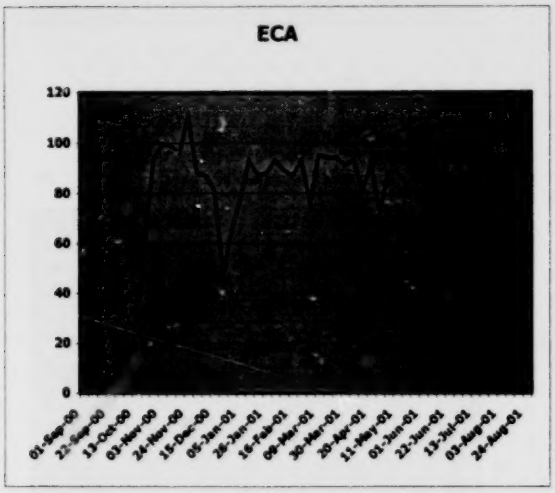
[a] From December 2000.

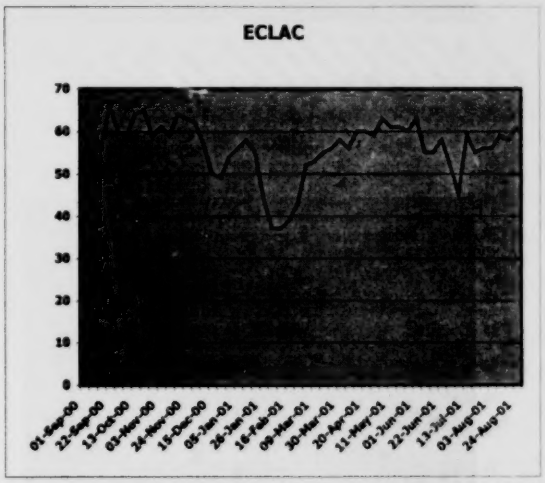
Annex III

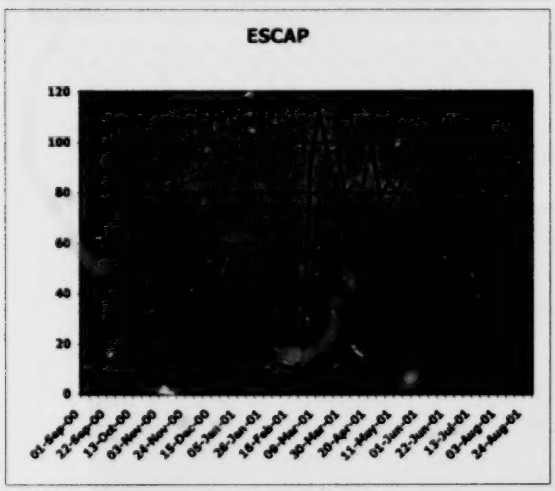
Integrated Management Information System average of distinct users

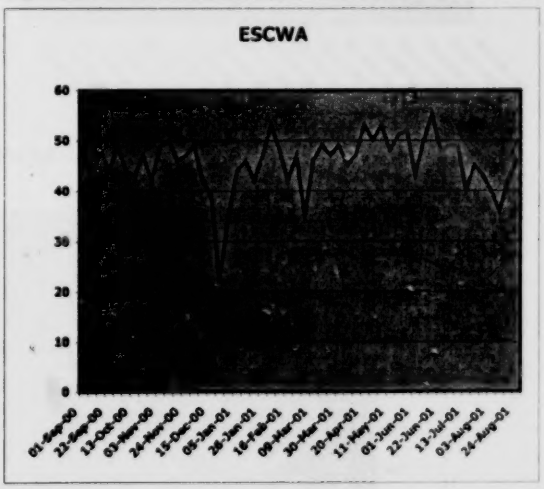
For the reporting period from 1 September 2000 to 31 August 2001, the average distinct users at Headquarters and at offices away from Headquarters accessing IMIS on a normal workday are shown below. The sharp increase in the number of users at ECA, ESCAP and the United Nations Office at Nairobi reflects the implementation of the finance functionality at those offices.

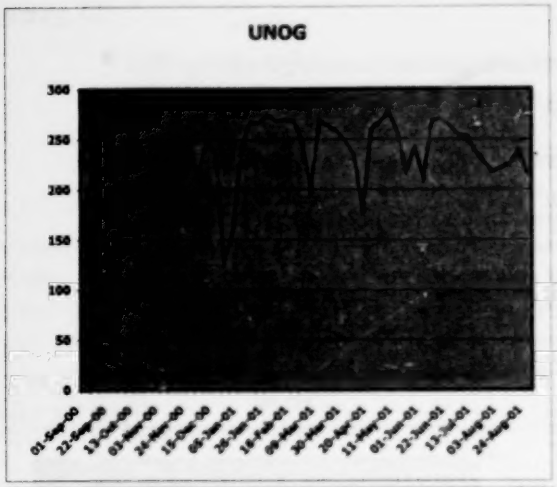
September 2000-August 2001







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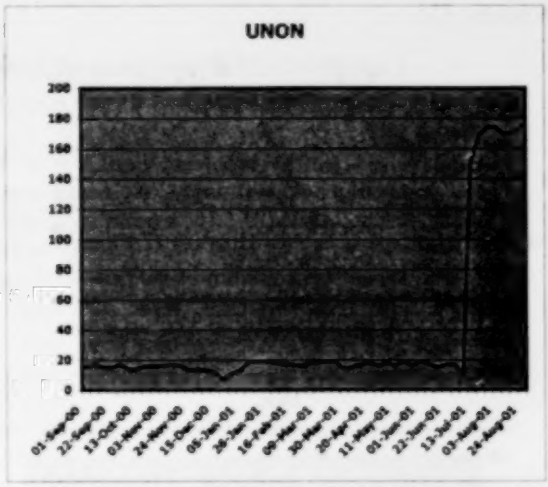
250
200
150
100
50
0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160
140
120
100
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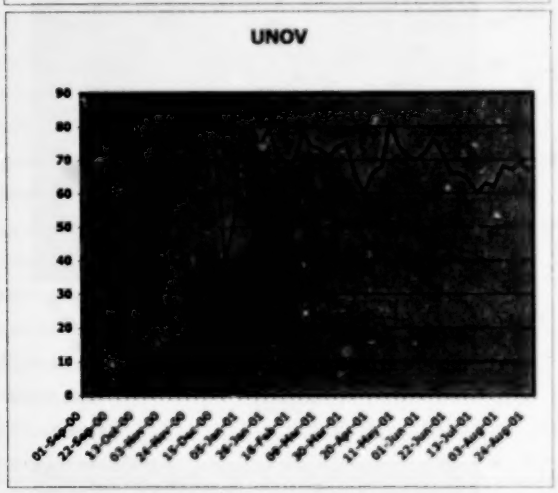
60
40
20
0


UNOV
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10
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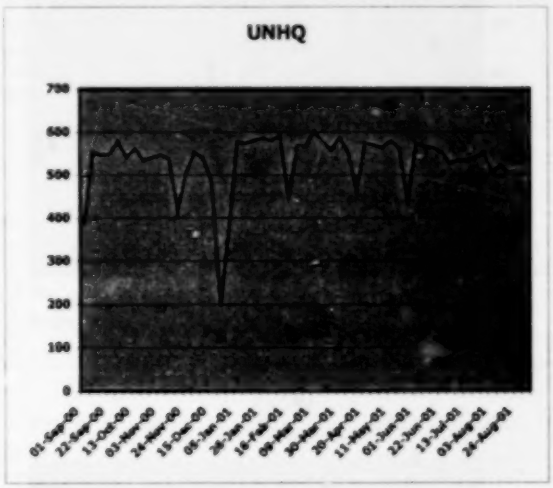
UNHQ
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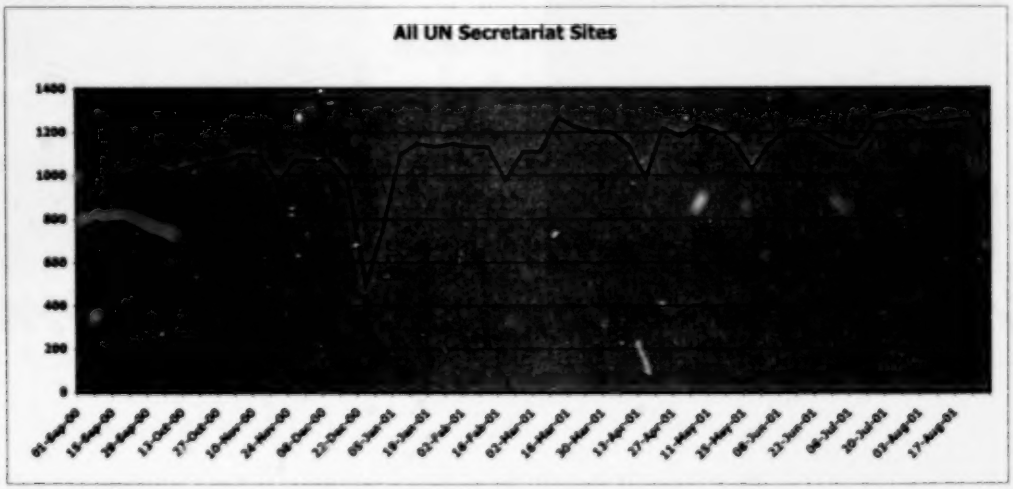
600
500
400
300
200
100
0


All UN Secretariat Sites
1400
1200
1000
800
600
400
200
0

Annex IV

Integrated Management Information System

Statement of assets, liabilities, reserves and fund balances as at 30 June 2001 (unaudited)

(Thousands of United States dollars)

	2001	*1999*
Assets		
Inter-fund balances receivable	8 418	13 438
Other accounts receivable	13	32
Total assets	**8 431**	**13 470**
Liabilities		
Unliquidated obligations	213	3 004
Other accounts payable	2	9
Total liabilities	**215**	**3 013**
Reserves and fund balances		
Cumulative surplus	8 216	10 457
Total reserves and fund balances	**8 216**	**10 457**
Total liabilities, reserves and fund balances	**8 431**	**13 470**